

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 April 2003 (17.04.2003)

PCT

(10) International Publication Number
WO 03/032501 A3

(51) International Patent Classification⁷: H04B 7/14

Robert, W., Jr. [US/US]; 122 Riverview Drive, Suwanee, GA 30024 (US).

(21) International Application Number: PCT/US01/49513

(22) International Filing Date:
26 December 2001 (26.12.2001)

(74) Agents: TILLMAN, Chad, D. et al.; Morris, Manning & Martin L.L.P., 6000 Fairview Road, Suite 1125, Charlotte, NC 28210 (US).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/257,398 22 December 2000 (22.12.2000) US
60/257,637 22 December 2000 (22.12.2000) US

(71) Applicant (for all designated States except US): SEEK-ERNET INCORPORATED [US/US]; 300 Satellite Boulevard, Suwanee, GA 30024 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

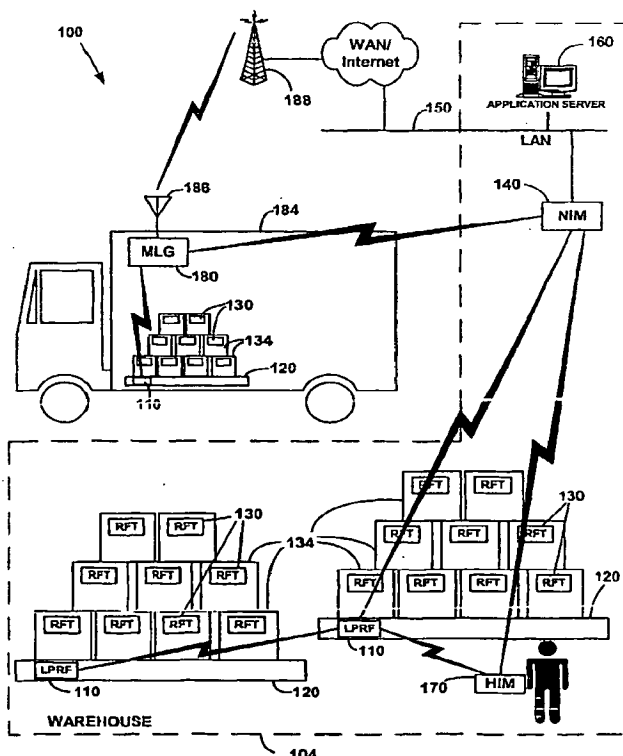
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent

(72) Inventor; and

(75) Inventor/Applicant (for US only): TWITCHELL,

[Continued on next page]

(54) Title: NETWORK FORMATION IN ASSET-TRACKING SYSTEM BASED ON ASSET CLASS



(57) Abstract: A plurality of wireless transceivers are associated with assets and each transceiver is assigned a class designation representative of an attribute, characteristic, relation, or behavior of its respective asset. Class based network formation routines are utilized to establish hierarchical networks based on asset classes, and the asset class is used by each transceiver to screen communications intended for receipt by transceivers of the same class. The overall wireless data communication network results in reduced power consumption and signal interference in asset-tracking applications. The transceivers may include a query handling routine for forming a dynamically distributed hierarchical database system. Furthermore, a recipient transceiver selectively receives communications from other local transceivers by transmitting at incrementally stronger power levels to successive groups of transceivers, and receiving reply transmissions only from a limited number of the transceivers that excludes those transceivers from which communications already are received.



(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
4 December 2003

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.